

WHAT IS CLAIMED IS:

1. A generally horizontal screw press for removing excess fluid from material; comprising:

a generally tubular body having a meshed surface; said body having a material inlet provided near a proximate end thereof;

an endless screw mounted in said tubular body; said endless screw including a generally conical shaft and a helicoidal blade mounted to said shaft;

a rear excess fluid outlet provided in said proximate end of said tubular body, said rear excess fluid outlet including a toroidal screen; and

a proximate end of said endless screw including at least one scraper blade assembly that is so mounted thereto as to be in near-contact with said toroidal screen;

whereby rotation of said endless screw induces a scraping action of said at least one blade assembly against said toroidal screen to thereby prevent said screen from becoming clogged.

2. A screw press as recited in claim 1, wherein said rear excess fluid outlet includes a meshed surface to allow the excess fluid to egress the screw press.

3. A screw press as recited in claim 1, wherein said rear excess fluid outlet is toroidal.

4. A screw press as recited in claim 1, wherein said at least one scraper blade assembly includes a support mounted to the endless screw and a scraper blade movably mounted to said support.

5. A screw press as recited in claim 1, wherein said at least one scraper blade assembly includes three scraper blade assemblies.

6. A screw press inlet section comprising:  
a housing defining an axially extending chamber having a longitudinal axis and a radial inlet opening for receiving an incoming solid-liquid mixture, said chamber having an outboard end wall;  
wherein said outboard end wall defines a plurality of liquid flow passages for allowing said outboard end wall to act as a drainage surface, and  
wherein a plurality of spaced-apart pulsators is provided within said chamber adjacent said outboard end wall for creating hydraulic pulses against said outboard end wall by repeatedly directing waves of incoming material thereagainst.

7. A screw press inlet section as defined in claim 6, wherein said radial inlet opening is located adjacent to said outboard end wall.

8. A screw press inlet section as defined in claim 6, wherein said pulsators include at least two baffles rotatably mounted within said chamber in front of said outboard end wall for rotation about said longitudinal axis, said baffles being raked relative to said outboard end wall.

9. A screw press inlet section as defined in claim 8, wherein said baffles are adapted to be securely mounted to an inlet end of a rotatable feed and compression screw.

10. A screw press inlet section as defined in claim 8, wherein said baffles have a fin-shaped blade portion.

11. A screw press inlet section as defined in claim 9, wherein said baffles include a pair of diametrically opposed baffles.

12. A screw press inlet section as defined in claim 6, wherein said outboard end wall includes a perforated plate adapted to be mounted about a rotatable feed and compression screw.

13. A screw press inlet section as defined in claim 12, further including a bearing housing mounted to an outer surface of said outboard end wall, said bearing housing defining a fluid collecting chamber for receiving liquid draining through said perforated plate.

14. A screw press inlet section as defined in claim 12, wherein said perforated plate is provided in the form of a disc in which said plurality of liquid flow passages are distributed.

15. A screw press for extracting liquids from a solid-liquid mixture, comprising:

a housing having longitudinally spaced-apart inlet and outlet sections, and a pressing section between said inlet and outlet sections; and

a rotatable feed and compression screw mounted within said housing for conveying the solid-liquid mixture from the inlet section to the outlet section while compressing and dewatering the liquid-solid mixture such that liquid is discharged from said housing,

wherein said inlet section has an outboard end wall, said outboard end wall defining a plurality of liquid flow passages for liquid to drain therethrough in a direction opposite to a general traveling direction of the solid-liquid mixture within said screw press,

wherein a set of pulsators is provided adjacent said outboard end wall for directing waves of incoming material against said outboard end wall.

16. A screw press as defined in claim 15, wherein said feed and compression screw extends perpendicularly through said outboard end wall, and wherein said liquid flow passages are distributed about said feed and compression screw.

17. A screw press inlet section as defined in claim 16, wherein said inlet section defines a radial inlet opening which is located adjacent to said outboard end wall.

18. A screw press as defined in claim 15, wherein said set of pulsators includes at least one baffle rotatably mounted within said housing in front of said outboard end wall for rotation about said longitudinal axis.
19. A screw press as defined in claim 18, wherein said at least one baffle has a fin-shaped blade portion.
20. A screw press as defined in claim 18, wherein said at least one baffle is securely mounted to said rotatable feed and compression screw.
21. A screw press as defined in claim 15, wherein said outboard end wall includes a perforated plate adapted to be mounted about said rotatable feed and compression screw.
22. A screw press as defined in claim 21, further including a bearing housing mounted to an outer surface of said outboard end wall, said bearing housing defining a fluid collecting chamber for receiving liquid draining through said perforated plate.
23. A screw press as defined in claim 22, wherein said perforated plate is provided in the form of a disc in which said plurality of liquid flow passages are distributed.